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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/759,739	01/12/2001	David R. Pehlke	8194-443	9747

20792 7590 12/17/2004

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EXAMINER

NGUYEN, SIMON

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/759,739

Applicant(s)

PEHLKE ET AL.

Examiner

SIMON D NGUYEN

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,8,13,16-18,20,21,23-39 and 42-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4 and 8 is/are allowed.
- 6) ☒ Claim(s) 1-3,13,16-18,20,21,23-27,29-39 and 42-44 is/are rejected.
- 7) ☒ Claim(s) 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 13, 16-18, 23-27, 29-31, 34-39, 42-44 are rejected under 35 U.S.C. 102(b) as being anticipated by O'Neill (5,038,112).

Regarding claim 1, O'Neill discloses an apparatus for monitoring a PA coupled to a transmitter (abstract, fig.1), comprising: a detector circuit (# 5, 12,13, 14-15, 16-17), coupled to the transmitter, that generates first and second detector signals corresponding to forward fundamental and reflected harmonic components of a PA output signal produced by the PA; and a comparing circuit (#20), coupled to the detector circuit, that compares the first and second detector signals (18, 19) (column 5 line 43 to column 6 line 32).

Regarding claim 17, this claim is rejected for the same reason as set forth in claim 1, wherein O'Neill further discloses an antenna (#8 of fig.1), a control circuit (#25) for generating a control signal to control the voltage supplied to the PA depending on the comparison of the different signal V_{diff} in order to control the gain (column 6 lines 32-38) in which a limiter device (#23 of fig.1) is operative to modify the level of the reference voltage generated when the level of the reflected power exceeds a pre-set

Art Unit: 2685

threshold value (column 6 line 61 to column 7 line 20), which means the control unit controlling a DC bias the PA.

Regarding claim 36, this claim is rejected for the same reason as set forth in claim 1.

Regarding claims 2, 18, 37, 43-44, O'Neill further discloses the comparing circuit generating a different signal (V_{diff}) from comparing the forward and reflected signals that indicates linearity of the PA (column 6 lines 22-48) and comparing the power level of an input signal (V_c) applied to the PA and a DC bias of the PA (modifying the level of reference voltage generated when the level of the reflected signal exceeds the threshold) (fig.1, column 6 line 49 to column 7 line 20).

Regarding claims 3, 24, 38, O'Neill further discloses the detector circuit use a diode and a capacitor to generate the second detecting signal (reflected signal) (column 6 lines 11-21) which means the second detecting signal generated without requiring phase information.

Regarding claims 13, 39, O'Neill discloses the first and second detector signals represent the forward and reflected power signals, respectively which means they represent for the fundamental and harmonic components.

Regarding claims 16, 35, 42, O'Neill discloses the second detector, wherein the second detector inherently generates a plurality of second detector signals since the power level of the reflected signal (for the second detector) is varied depending on the transmission power control in the PA (column 6 lines 49 to column 7 line 20).

Art Unit: 2685

Regarding claim 23, the limiting device in O'Neill is a bias control unit since it is operative to modify the power when the reflected power exceeds the pre-set threshold (column 6 line 61 to column 7 line 20).

Regarding claims 25-27, 29-31, 34, O'Neill discloses a first directional coupler coupled to the PA and a first power detector to generate a first output signal, a second directional coupler coupled to the PA and a second detector to generate a second output signal, and wherein the first output signal is a forward power, and wherein the second output signal is a reflected signal (fig.1, column 5 line 43 to column 6 line 48).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Neill (5,038,112) in view of Pickett et al. (5,196,808).

Regarding claim 20, this claim is rejected for the same reason as set forth in claim 1, wherein O'Neill further discloses an antenna (8 of fig.1), a control unit (25) having a control signal (Vc) to control the PA responsive to comparison of the first and second detector signal (column 22-48). It should be noted that O'Neill disclosing a leveling control circuit for a transmitter (#2 of fig.1) in a cellular telephone (column 4 line 14), wherein the cellular phone inherently includes a baseband processor and a

Art Unit: 2685

modulator (inherently in a transmitter). However, O'Neill does not specifically disclose how the control unit to connect to a radio section for controlling both the power amplifier and the radio section.

Pickett, in the same type of invention, discloses a control unit (#48 of fig.1) wherein the control unit controls an input signal to the PA wherein the control unit includes a processor for controlling the level power of the PA and controlling the frequency synthesizer for modulating an input signal to control the power output to the PA (fig.1, column 2 line 30 to column 3 line 64). It should be noted that the processor of Pickett is inherently a baseband processor since it is used for modulating the input signal. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have O'Neill, modified by Pickett to process a signal to control the power level of the power amplifier in order to prevent power overload and destruction of the transmission circuitry.

Regarding claim 21, O'Neill further discloses a limiter device (#23 of fig.1) is operative to modify the level of the reference voltage generated when the level of the reflected power exceeds a pres-set threshold value (column 6 line 61 to column 7 line 20), which means the baseband processor in the cellular telephone applying a bias control signal to the PA.

5. Claims 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Neill (5,038,112) in view of Datz (4,882,547).

Art Unit: 2685

Regarding claim 32-33, O'Neill does not specifically disclose the power detector coupled to a filter.

Katz, in the same type of invention, discloses a power detector (30) coupled to an output of a bandpass filter (26) to generate a second detector signal (34) (fig.1). It should be noted that Katz does not specifically disclose a capacitive filter, however, the bandpass filter is capacitively known to those skilled in the art. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have O'Neill, modified by Datz to filter unwanted signal prior to detecting a power signal in order to improve the transmission power control.

Allowable Subject Matter

6. Claims 4 and 8 are allowed.

Regarding claim 4, the prior art of record fails to disclose a filter, capacitively coupled to the transmission medium by a capacitor shunt circuit, that filters the power amplifier output signal to produce a filtered output signal in the detector circuit.

Regarding claim 8, the prior art of record fails to disclose a third power detector coupled to the second directional coupler for determining the power reflected.

7. Claim 28 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 28, the prior art of record fail to teach or disclose a third power detector, coupled to the second directional coupler.

Response to Arguments

8. Applicant's arguments filed 7/8/04 have been fully considered but they are not persuasive.

a. O'Neil does not disclose forward fundamental and reflected harmonic components related to independent claims 1, 17, and 36.

The examiner disagrees with the arguments after carefully reviewing the prior art, first O'Neil discloses a detector circuit for detecting a forward power and a reflected power in a power amplifier (column 6 lines 5, 11-12), wherein the forward power is considered as a forward fundamental power of the PA because it used for the transmission power of a signal, and the reflected power is considered as a harmonic power because the reflected power helps to overcome the problem of filter ripple so as to deliver a more uniform level of power to the antenna, wherein the reflected power compensates for the cripple affect (column 4 line 45 to column 5 line 39).

Secondly, Examiner does not see any differences between the forward power and the forward fundamental component, between the reflected power and the reflected harmonic component as to expressed between two in the drawings as well as in the SPEC.

Thirdly, if the applicant does not agree with the response, the applicant should **provide in the claims**, where the forward fundamental and reflected harmonic

Art Unit: 2685

components come from, and how they have been formed and generated in order to clearly define what the applicant means of fundamental and harmonic. Otherwise, the forward power in O'Neil is the forward fundamental power and the reflected power is the reflected harmonic power.

b. There is no evidence that processor 46 is inherently a baseband processor, therefore, the Office Action provides sufficient evidence from the prior art of a motivation or suggestion to combine O'Neil and Pickett for claim 20.

Pickett discloses that the processor takes pre-stored data in a memory associated with the various power levels for different modulation types for the power amplifier, wherein a PUSH-TO-TALK used for inputs voice signals to be transmitted wherein the voice signals processed to the processor prior to be transmitted (fig.1, column 2 lines 33, 49-55). Pickett also discloses voice and data circuitry for the AM modulation input to be transmitted and wherein the signal is converted from analog to digital signal (column 2 lines 23, 33-34). In the RF digital communication as of Pickett, voice or data inputted has to be converted to a digital signal, then demodulating to a baseband signal by the processor. Prior to transmit, the baseband signal is converted to a RF signal (by a modulator).

Supporting for this argument, Yamashita (6,625,429), in the previously cited art, discloses a transmitter comprises power detectors, wherein the transmitter further comprises a control section (inherently a processor) for producing a baseband

Art Unit: 2685

transmission signal (column 2 lines 60-61). Therefore, the Pickett's processor inherently convert voice or data signal to a baseband signal.

In conclusion, the Office Action provides sufficient evidence from the prior art of a motivation or suggestion to combine O'Neil and Pickett.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Simon Nguyen whose telephone number is (703) 308-1116. The examiner can normally be reached on Monday-Friday from 7:00 AM to 4:00PM.

Art Unit: 2685

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban, can be reached on (703) 305-4385.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 306-0377.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

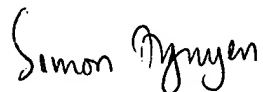
Or faxed to:

(703) 872-9314, (for formal communications intended for entry)

Hand-delivered response should be brought to Crystal Park II,
2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Simon Nguyen

December 13, 2004

A handwritten signature in cursive script that reads "Simon Nguyen".